

WHAT IS CLAIMED IS:

1. A method for manufacturing an electrical module assembly, the method comprising:
 - providing an electrical module including at least one metal oxide varistor (MOV) disk;
 - axially compressing the electrical module;
 - heating the electrical module;
 - preparing a reinforcing structure for application to the electrical module;
 - wrapping the reinforcing structure around the electrical module to produce the electrical module assembly;
 - attaching shrink film to the electrical module assembly;
 - spiral winding the shrink film around the electrical module assembly;
 - securing the wrapped shrink film to the electrical module assembly;
 - heating the shrink film such that the shrink film shrinks and applies a radially compressive force to the electrical module assembly; and
 - curing the reinforcing structure of the electrical module assembly in a manner in which the shrink film does not apply a radially compressive force to the electrical module assembly during the curing.
2. The method of claim 1 wherein curing the reinforcing structure such that the shrink film does not apply a compressive force to the electrical module assembly comprises heating the electrical module assembly at a temperature at which the shrink film does not apply a compressive force to the electrical module assembly.
3. The method of claim 2 further comprising cooling the electrical module assembly.
4. The method of claim 3 further comprising removing the shrink film from the electrical module assembly.
5. The method of claim 1 wherein curing the reinforcing structure such that the shrink film does not apply a compressive force to the electrical module assembly comprises, after heating the shrink film:
 - cooling the electrical module assembly;

removing the shrink film from the electrical module assembly; and
curing the electrical module assembly without the shrink film.

6. The method of claim 1 wherein spiral winding the shrink film around the electrical module assembly comprises spiral winding the film over the surface of the electrical module assembly while maintaining a substantially constant tension on the film.

7. The method of claim 1 further comprising maintaining the axial compression of the electrical module through curing of the reinforcing structure.

8. A method for manufacturing an electrical module assembly, the method comprising:
providing an electrical module assembly including at least one MOV disk to which a reinforcing structure has been applied;
wrapping the electrical module assembly with shrink film;
compacting the wrapped electrical module assembly by heating the shrink film such that the shrink film shrinks and applies a compressive force to the electrical module assembly; and
curing reinforcing structure of the wrapped electrical module assembly at a temperature at which the shrink film no longer applies a compressive force.

9. The method of claim 8 wherein the shrink film is a bi-axially oriented polypropylene film.

10. The method of claim 8 wherein compacting the wrapped electrical module assembly by heating the shrink film comprises heating the shrink film at approximately 150 degrees Celsius for approximately 10 minutes to approximately 30 minutes.

11. The method of claim 8 wherein curing the wrapped electrical module assembly comprises heating the wrapped electrical module assembly at approximately 165 degrees Celsius for approximately 5 minutes to approximately 30 minutes.

12. The method of claim 8 wherein a temperature at which the wrapped electrical module assembly is compacted is of a different magnitude than the temperature at which the wrapped electrical module assembly is cured.

13. The method of claim 8 wherein wrapping the electrical module assembly with shrink film comprises:

- attaching the shrink film to an end of the electrical module assembly;
- spiral winding the shrink film over the surface of the electrical module assembly while maintaining a substantially constant tension on the shrink film; and
- securing the shrink film at an opposite end of the electrical module assembly.

14. The method of claim 8 wherein curing the wrapped electrical module assembly at a temperature at which the shrink film no longer applies a compressive force comprises heating the electrical module assembly at a temperature at which the shrink film relaxes and ceases to apply a compressive force to the electrical module assembly.

15. The method of claim 14 further comprising cooling the electrical module assembly.

16. The method of claim 15 further comprising removing the shrink film from the electrical module assembly.

17. The method of claim 8 wherein curing the wrapped electrical module assembly at a temperature at which the shrink film no longer applies a compressive force comprises, after heating the shrink film:

- cooling the electrical module assembly;
- removing the shrink film from the electrical module assembly; and
- curing the electrical module assembly without the shrink film.

18. The method of claim 8 wherein providing the electrical module assembly comprises:

- placing at least one MOV disk within the electrical module assembly;
- compressing the electrical module assembly;
- preparing the electrical module assembly; and

wrapping the MOV disks with a reinforcing structure.

19. The method of claim 18 wherein compressing the electrical module assembly comprises compressing the electrical module assembly using pressure of 250 pounds or more.

20. The method of claim 18 wherein preparing the electrical module assembly comprises heating the electrical module assembly to a surface temperature of approximately 49 degrees Celsius.

21. The method of claim 18 wherein the reinforcing structure is a pre-impregnated fiber composite.

22. The method of claim 18 further comprising maintaining the axial compression of the electrical module through curing of the reinforcing structure.

23. A method for manufacturing an electrical module assembly, the method comprising:
 providing an electrical module assembly including at least one MOV disk to which a reinforcing structure has been applied;
 attaching tape to an end of the electrical module assembly;
 spiral winding the tape over the surface of the electrical module assembly while maintaining a substantially constant tension on the tape;
 securing the tape at an opposite end of the electrical module assembly;
 heating the electrical module assembly while the tension on the tape compresses the electrical module assembly; and
 curing the wrapped electrical module assembly at a temperature at which the tape does not apply a compressive force to the electrical module assembly.

24. The method of claim 23 wherein curing the wrapped electrical module assembly at a temperature at which the tape no longer applies a compressive force comprises heating the electrical module assembly at a temperature at which the tape does not apply a compressive force to the electrical module assembly.

25. The method of claim 24 further comprising cooling the electrical module assembly.
26. The method of claim 25 further comprising removing the tape from the electrical module assembly.
27. The method of claim 23 wherein curing the wrapped electrical module assembly at a temperature at which the tape no longer applies a compressive force comprises, after heating the tape:
- cooling the electrical module assembly;
 - removing the tape from the electrical module assembly; and
 - curing the electrical module assembly without the tape.
28. The method of claim 23 wherein providing the electrical module assembly comprises:
- placing at least one MOV disk within the electrical module assembly;
 - axially compressing the electrical module assembly; and
 - wrapping the at least one MOV disk with a reinforcing structure.
29. The method of claim 28 wherein compressing the electrical module assembly comprises compressing the electrical module assembly using pressure of 250 pounds or more.
30. The method of claim 28 further comprising heating the electrical module assembly to a surface temperature of approximately 49 degrees Celsius before wrapping the at least one MOV disk with a reinforcing structure.
31. The method of claim 28 wherein the reinforcing structure is a pre-impregnated fiber composite.
32. The method of claim 28 further comprising maintaining axial compression on the electrical module created as a result of compressing the electrical module.